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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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May Xun

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Kevin M. Able  
Corning Incorporated  
Intellectual Property Dept.  
SP-TI-3  
Corning, NY 14831

EXAMINER

LOPEZ, CARLOS N

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/730,175	XUN ET AL.	
	Examiner	Art Unit	
	Carlos Lopez	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-15,17,18,20 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-15,17,18,20 and 22-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Absent an explicit definition by applicant, the phrase "cooling rate" as used in claim 11 has been given its plain meaning in the art which is the temperature change with respect to time. However, the cooling rate as used in the specification refers to the change in temperature with respect to the distance from the root of the glass fabricating apparatus (see Paragraph 27 of the specification). Since claim 11 fails to note that "cooling rate" is the change in temperature with respect to the distance from the root of the glass fabricating apparatus it is deemed that the specification fails to support that applicant had possession of the claimed invention of varying the cooling rate with respect to time.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1,3-4,6-9,10-15,17-18,20, 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "glass-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "glass-like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3-4,6-9,10-15,17-18,20,22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda (JP 10-053426) in view of Kitayama et al (US 5,916,656). Maeda discloses a method of making glass for optical recording mediums (See Machine translation paragraph 1). The method comprises drawing glass (as shown in figure 1) and cooling the glass by passing the glass into a segmented cooling device comprising 12 compartments (see machine translation paragraph 30 and figure 3). Maeda is silent disclosing modifying a thermal stress of the glass sheet such that the thermal stress is a tensile stress or substantially zero. However, Maeda notes that the glass manufactured by its method provides for glass having a small curvature, which is deemed as being substantially free from warping (See Machine translation paragraph 34). The small curvature noted by Maeda is due thermal stress caused by the varying

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temperature within the glass, thus in providing a glass having a small curvature, Maeda is in fact modifying, minimizing, the thermal stress of the glass. As further taught by Kitayama, glass used for optical recording mediums, as done by Maeda, is preferred to have no thermal distortion (Col. 23, lines 1ff), no thermal stress.

Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided a glass sheet of Maeda having no warping as alluded by Maeda itself and further taught by Kitayama in order to provide a glass for optical recording medium.

In regards to the new limitation, applicant notes that Maeda only heats the glass from its glass transition temperature point by pointing out paragraph 17. However, paragraph 31 notes that the glass transition point of the glass is 500°C but since of the glass is cooled starting at a temperature of 520°C, which is above the glass transition point, it would thus mean the glass is in liquid state whose temperature traverses the glass transition temperature as it is cooled down to 160°C into its glass state, see in paragraph 31. Hence the argument that Maeda does not disclose the temperature of the glass sheet traversing the glass transition period is found unpersuasive. The glass is cooled starting from a temperature that is above its transition point, 520°C, a temperature where the glass is in a liquid form, down to temperature where the glass is in its glass state of 160°C.

As for claim 3-4, 12-13, 20, and 22-23 the molten glass sheet, hence at a temperature in its glass transition range, passing through 12 compartments each having a temperature difference of at least 10 degrees Celsius (See Machine translation

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paragraph 30) provides for the claimed cooling segments having different slopes and as noted in machine translation paragraph 31, the temperature of the cooling is done over the glass transition temperature of the glass, 500°C.

As for claims 6-7, 17, and 24 the temperature of each segments is lowered by a difference ranging from 10°C to 40°C, thus the slope of a segment is higher the preceding segment.

As for claim 8, 14, and 25 the glass entering a segment having a lower temperature would cause the segment to increase its temperature for which it would result in a non-linear cooling as evidenced by Newton's cooling equation, see non-patent literature cited in PTO-892.

As for claim 10, the glass being drawn downward towards gravity is under tension.

As for claim 11, a repetition of the processes disclosed by Maeda, would have been done to arrive at the claimed cooling sequence that would provide a glass with no warping.

As for claim 18, the root is deemed as shaping form 2 of Maeda.

### ***Response to Arguments***

Applicant's arguments filed 1/26/06 have been fully considered but they are not persuasive. In regards to the new limitation, applicant notes that Maeda only heats the glass from its glass transition temperature point by pointing out paragraph 17.

However, paragraph 31 notes that the glass transition point of the glass is 500°C but since of the glass is cooled starting at a temperature of 520°C, which is above the glass

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transition point, it would thus mean the glass is in liquid state whose temperature traverses the glass transition temperature as it is cooled down to 160°C into its glass state, see in paragraph 31. Hence the argument that Maeda does not disclose the temperature of the glass sheet traversing the glass transition period is found unpersuasive. The glass is cooled starting from a temperature that is above its transition point, 520°C, a temperature where the glass is in a liquid form, down to temperature where the glass is in its glass state of 160°C

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin, can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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